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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/651,783	08/30/2000	Shuichi Kanno	NIP-198	2461

7590 09/04/2002

Mattingly Stanger & Malur PC
104 East Hume Avenue
Alexandria, VA 22301

EXAMINER

NGUYEN, NGOC YEN M

ART UNIT	PAPER NUMBER
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1754

6

DATE MAILED: 09/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/651,783

Applicant(s) *KA*

KANNO ET AL

Examiner

Ngoc-Yen M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Applicant's election without traverse of Group I in Paper No. 5 is acknowledged.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rossin et al (6,069,291) in view of JP 11-216,455 or JP 08-318,122 or Lang et al (6,235,256).

Rossin '291 discloses a process for the decomposition of perfluoroalkanes to HF and CO₂ by contacting, in the presence of oxygen, the perfluoroalkanes with a catalyst composition (note claim 1). Rossin '291 further discloses that if the concentration of hydrofluoric acid in the effluent stream is deemed unacceptable, convention collection or abatement processes, such as caustic scrubbing, may be employed to avoid venting acid gases directly into the atmosphere (note column 5, lines 43-47).

The difference is Rossin '291 does not disclose the step of removing mist from the effluent stream after the caustic scrubbing step.

JP '122 discloses a process for treating waste gas by decomposing fluorocarbon and for recovering effective components by continuously and quantitatively treating decomposed fluorocarbon with a circulation liquid to which alkali is added (note English

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abstract). The decomposed gas is led to a scrubber and is neutralized with a circulation liquid to which alkali is added to form dissolving chloride and solid matter of fluoride (note English abstract). JP '122 teaches that some non-decomposed fluorocarbon is remained in the exhaust gas after the scrubbing step. JP '122 further teaches the step of passing the exhaust gas from the scrubbing tower to the adsorption tower which is filled with activated carbon to remove any remaining fluorocarbon (note paragraph 0040).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made further pass the exhaust gas of the scrubbing column in Rossin '291 to an adsorption column filled with activated carbon, as suggested by JP '122 to further remove any un-decomposed fluorocarbon.

Alternatively, JP '455 can be applied. JP '455 discloses a process for treating the exhaust gas generated in a process of making printed circuit board by passing the exhaust gas through the catalytic thermal decomposition device 4 and the waste gas cleaning device 5 and discharged as a harmless exhaust gas 6 (note English abstract). As shown in Figure 3, the exhaust gas after scrubber 5 is introduced into a cyclone 8. Here the moisture within the exhaust gas is removed and recycled back to the scrubber 5 thereby minimizes the requirement of fresh scrubbing liquid (note paragraph 0036).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made pass the exhaust gas of the scrubbing column in Rossin '291 to a

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cyclone, as suggested by JP '455 in order to remove the moisture therein and to recycle it to the scrubber.

Alternatively, Lang '256 can be applied. Lang '256 discloses a process for scrubbing acid gases. In the process, the improvement is a demister arranged at a location after the liquid droplets have been sprayed by the spray means into the flow path of the flue gases (note column 3, lines 8-43 and claim 1).

It should be noted that after the decomposing step in Rossin '291, the exhaust gas contains acid gases (such as HF).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to pass the exhaust gas of the scrubbing column in Rossin '291 to a demister, as suggested by Lang '256 in order to obtain the advantages (i.e., improvements) as disclosed in Lang '256 (note for example column 1, lines 44-50).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (703) 308-2536. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (703) 308-3837. The fax phone

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numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1754

nmn
July 12, 2002